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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,386	04/30/2004	Ramesh NAGARAJAN	118447	3385
27074	7590	12/10/2008		
OLIFF & BERRIDGE, PLC. P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER MOTSINGER, SEAN T	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 12/10/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/709,386	<b>Applicant(s)</b> NAGARAJAN ET AL.	
	<b>Examiner</b> SEAN MOTSINGER	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Response to Applicants Arguments/Amendments***

1. Applicants arguments/amendments filed on 8/6/2008 have been entered and made of record.
2. Applicants arguments/amendments with respect to the rejections under 35 U.S.C. 112 have been fully considered but the rejection has not been overcome by this amendment. The claim states "segmenting the frequency grey scale image data into a plurality of blocks based on grey scale levels of the grey scale image data." Applicant has amended to remove the "high frequency" while the grey level image can be segmented into blocks this is not done by "based on grey scale levels of the grey scale image data." The examiner suggests canceling the claim and adding a new claim with respect to the blocks that is derived from the specification. This claim was amended to overcome an objection to the drawings, which has resulted in the nature of the claim being completely changed to from referring to a plane to referring to a block. Since the blocks are different the planes in applicants specification subject matter which was described for planes is not supported for blocks which has resulted in rejections under 35 U.S.C. 112 first paragraph. If applicant wishes to have a claim with respect to the blocks described in the specification the examiner suggests added a new claim addressing the blocks which is supported by the specification.

3. Applicants arguments/amendments with respect to the rejections 35 U.S.C. 103 have been fully considered and are persuasive the previous office action failed to provide an adequate explanation of why the invention would be obvious. However, such an explanation can easily be made and therefore the rejection has been maintained but modified to provide sufficient explanation to establish a prima facie case of obviousness.

***Rejections Under 35 U.S.C. 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim(s) 1-4 is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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5. Claim(s) 9 is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 9 defines a “apparatus”. However, the body of the claim lacks definite structure indicative of a physical apparatus. Furthermore, the specification indicates that the invention may be embodied as pure software paragraph 52. Therefore, the claim as a whole appears to be nothing more than a “system” of software elements, thus defining functional descriptive material per se.
6. Functional descriptive material may be statutory if it resides on a “computer-readable medium or computer-readable memory”. The claim(s) indicated above lack structure, and do not define a computer readable medium and are thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program.

### ***Rejections Under 35 U.S.C. 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 2 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 2 and 10 recite "segmenting the high spatial frequency grey scale image data into a plurality of blocks based on grey scale levels of the grey scale image data.". The specification only recites that the grey level image may be divided into a plurality of blocks it does not base it on the grey scale levels of the image data.

### ***Rejections Under 35 U.S.C. 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2 and 9, 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844.

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9. Re claim 1 Noh et al discloses A method for reformatting binary image data (bi – level dithered image column 2 lines 25), comprising: converting source (note the binary image data has a source) binary image data into grayscale image data (undither to create “multi-level image” column 2 lines 25-50);
10. Noh does not disclose segmenting gray scale image data into a first plane having high spatial frequency gray scale image data and a second plane having low spatial frequency gray scale image data; and separately compressing the high spatial frequency gray scale image data in the first plane and the low spatial frequency gray scale image data in the second plane.
11. Fan et al discloses segmenting gray scale image data into a first plane (upper plane column 5 lines 5-15 ) having high spatial frequency gray scale image data (dark sides of edges see abstract) and a second plane (lower plane column 5 lines 5-15) having low spatial frequency gray scale image data (smooth portions see abstract); and separately compressing (column 5 lines 24-30 note each can be compressed differently) the high spatial frequency gray scale image data in the first plane and the low spatial frequency gray scale image data in the second plane.
12. The motivation to combine is that Noh suggests that any image compression algorithm may be used in combination with his invention (see column 2 lines 50-57). Fan describes an image compression algorithm, Therefore it would have been obvious to combine Noh with Fan.

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13. Re claim 2 Fan discloses wherein segmenting gray scale image data includes segmenting gray scale image data into a plurality of blocks (see figure 2) based on gray scale levels of the scale image data.
14. Re claim 9, claim 9 is claimed as an apparatus performing the method of claim 1 (see rejection for claim 1.)
15. Re claim 10, claim 10 is claimed as an apparatus performing the method of claim 2 (see rejection for claim 2.)
16. Claims 4, and 12-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844.
17. Re claim 4 Noh and Fan disclose all of the elements of claim 1, they do not disclose a computer readable storage medium that stores a program of that embodies the method of claim 1. However examiner is take official notice that it is well known to implement such methods in computer code and store them on a computer readable medium. The advantage would be to be able to transfer the program. Therefore it would have been obvious to one of ordinary skill in the art to combine Noh, Fan and examiners official notice



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18. Re claim 12 Noh and fan disclose all of the elements of claim 9 the do not disclose a marking device incorporating the apparatus of claim 9. However examiner is taking a official notice that marking devices are notoriously well known. The advantage to combine would to improve the marking device such that “economies in the resources used to store and transmit image data can be achieved by compression” Therefore it would have been obvious to one of ordinary skill in the art to combine Noh, Fan and examiners official notice
19. Re claim 13 Noh and fan disclose all of the elements of claim 9 the do not disclose a photocopier incorporating the apparatus of claim 9. However examiner is taking a official notice that photocopiers are notoriously well known. The advantage to combine would to improve the photocopier such that “economies in the resources used to store and transmit image data can be achieved by compression” Therefore it would have been obvious to one of ordinary skill in the art to combine Noh, Fan and examiners official notice
20. Re claim 14 Noh and fan disclose all of the elements of claim 9 the do not disclose a document scanner incorporating the apparatus of claim 9. However examiner is taking a official notice that document scanners are notoriously well known. The advantage to combine would to improve the document scanner such that “economies in the resources used to store and transmit image data can be

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achieved by compression" Therefore it would have been obvious to one of ordinary skill in the art to combine Noh, Fan and examiners official notice

21. Claims 3, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844 in further view of Kodidis, Eleftherios et al. "Nonlinear Adaptive Filters For Speckle Suppression in Ultrasonic Images," Signal Processing, Signal Processing v 52 n3 August 1996, pp. 357-372.
22. Re claim 3 Noh and Fan disclose all of the elements of claim 1 they do not disclose enhancing the low spatial frequency gray scale image data in the second plane. Kodidis discloses a method of speckle reduction (See abstract, which is a method for enhancing low spatial frequency data). The motivation to combine is to suppress speckle (see abstract).
23. Re claim 11, claim 11 is claimed as apparatus performing the method of claim 3 (see rejection for claim 3.)

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN MOTSINGER whose telephone number is (571)270-1237. The examiner can normally be reached on 9-5 M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jingge Wu/  
Supervisory Patent Examiner, Art Unit 2624

Motsinger  
12/3/2008